ABSTRACT OF THE DISCLOSURE

A resource allocation method for use in a wireless ATM network comprises receiving on a wireless signaling channel a request for access to a shared frequency-time sliced wireless medium. A channel matrix is then searched for a set of available frequency-time slots. The channel matrix represents a time frame within the shared frequency-time sliced wireless medium, and is used to keep track of resource allocation in the time-frequency sliced medium. The set of available time-slots is then allocated if the allocation does not violate a frequency switching constraint, and if the set of available frequency-time slots contains a number of slots no smaller than a requested number of slots. In a preferred embodiment of the invention, the searching step uses a greedy resource allocation strategy to search a channel-chunk matrix comprising a list of contiguous chunks of available time slots in each frequency of the shared frequency-time sliced wireless medium. The greedy resource allocation strategy comprises the following successive allocation steps: searching for a single contiguous set of available time slots in a single frequency, where the size of the set of available slots is equal to the requested size [60]; searching for a single contiguous set of available time slots in a single frequency, where the size of the set of available slots is greater than the requested size [64]; searching for separate chunks of available time slots in a single frequency [66]; and searching for separate chunks of available time slots in multiple frequencies [68]. Each allocation step comprises checking whether the allocation violates a frequency switching constraint.